

US 6238905 B1 USPAT 20010529 125 Thermophilic polymerase III holoenzyme  
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FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, SCISEARCH, BIOTECHNO' ENTERED AT  
19:33:45 ON 02 DEC 2008

L1 1594589 S POLYMERASE  
L2 1 S L1 AND POLC SUBUNIT  
L3 97 S L1 AND POL C  
L4 31 DUP REM L3 (66 DUPLICATES REMOVED)  
L5 0 S L4 AND STEAROTHERMOPHILIS  
L6 57 S STEAROTHERMOPHILIS  
L7 4 S L6 AND L1

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TI CLONING AND CHARACTERIZATION OF THE POL-C REGION OF  
BACILLUS-SUBTILIS.

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AB The polC gene of Bacillus subtilis is defined by five  
temperature-sensitive mutations and the 6-(p-hydroxyphenylazo)-uracil  
(HPUra) resistance mutation azp-12. Biochemical evidence suggests that  
polC codes for the 160-kilodalton DNA polymerase III. A  
recombinant plasmid, p154t, was isolated and found to contain the azp-12  
marker and one end of the polC gene (N. C. Brown and M. H. Barnes, J.  
Cell. Biochem. 78[Suppl.]:116, 1983). The azp-12 marker was localized to  
a 1-kilobase DNA segment which was used as a probe to isolate recombinant  
lambda phages containing polC region sequences. A complete polC gene was  
constructed by in vitro ligation of DNA segments derived from two of the  
recombinant phages. The resulting plasmid, pRO10, directed the synthesis  
of four proteins of 160, 76, 39, and 32 kilodaltons in Escherichia coli  
maxicells. Recombination-deficient (recE) B. subtilis PSL1 containing  
pRO10 produced an HPUra-resistant polymerase III activity which  
was lost when the strain was cured of pRO10. In vivo, the HPUra  
resistance of the plasmid-encoded polymerase III appeared to be  
recessive to the resident HPUra-sensitive polymerase III enzyme.